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UNITED STATES
DEPARTMENT OF AGRICULTURE

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**GRADUATE
SCHOOL**



**OPPORTUNITIES
FOR
GRADUATE STUDY
IN THE
FEDERAL SERVICE**

✓
**GRADUATE
BULLETIN**

**WASHINGTON
AUGUST, 1945**

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GRADUATE SCHOOL

of the

UNITED STATES DEPARTMENT OF AGRICULTURE

GRADUATE



BULLETIN

OPPORTUNITIES FOR GRADUATE STUDY
IN THE FEDERAL SERVICE

WASHINGTON, D. C.

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Evolution of In-Service Graduate Study

Science, democracy, and education are closely interwoven in the fabric of American tradition. From the early days of the Republic when George Washington and subsequently John Quincy Adams recommended the establishment of a national university in which to teach the young and to advance knowledge, an important group of American thinkers have insisted that democracy can grow, and ultimately survive, only with the assistance of science and technology. It was not until the administration of President Lincoln, however, that significant steps were taken to give Federal governmental aid in the dissemination of scientific knowledge to the majority of citizens, the farmers: first, by the establishment of the Land Grant College system and, secondly, by the creation of the United States Department of Agriculture to bring science into the field of agriculture on a national scale.

Science is progressive. The latest information of yesterday is out-moded today. As scientific service to agricultural production increased, it logically led, through increased knowledge, to the regulation of distribution for the benefit and protection of consumers as well as for the marketing advantage of farmers. This work required additional numbers of persons trained in biology, botany, and affiliated science to study and devise the best means of effecting these ends. So it was very early in the history of the Department of Agriculture that serious attention was devoted to education in relation to effective governmental service.

Graduate Study and Research

The growth in graduate education in the post-Civil War period accelerated the increasing interrelations of government and science. The need for research and prolonged investigation grew with the expansion of governmental services in agriculture. More and more scientists were recruited directly from educational institutions. The Land Grant Colleges played a leading role in training these scientists and technicians who were subsequently to perform useful work in the evolution of the functions of the Department of Agriculture and in creating an intellectual climate conducive to the unprecedented development of post-entry education.

During the latter half of the nineteenth century, the genesis of a merit system in the Federal Government was a further recognition of the need for trained non-partisan personnel to serve American citizens through the agencies of national government. This was a further step in the wedding of science to democracy, through the selection of the nation's best minds, to become the servants of all the people.

Subsequently, the idea of a career system in government began to emerge, as greater emphasis was laid upon the method of promotion from within the ranks rather than the earlier procedure of hiring for each particular job without intention of systematic promotion.

Formation of The Graduate School

Paralleling these changes came the conspicuous need for further training of employees after entry into government service. A consequence of this trend was the recruitment of men and women at younger ages than formerly. For personnel of limited means, as most government employees were, it was nearly an impossibility to finish their advanced education or, in an effort to do so, to obtain leaves of absence under governmental regulations. It was for the primary purpose of improving the skill, knowledge, and attitudes of employees in the natural and social sciences and of extending facilitating educational opportunities to such employees that the Graduate School of the Department of Agriculture was founded in 1921. Its basic authority states that the School exists "to make available to career employees the opportunity to advance educationally, continuously and progressively, as they advance in job proficiency and responsibility" and "to provide graduate education acceptable in graduate institutions for the convenience of employees who desire advanced degrees but find it difficult, both for personal and official reasons, to complete all study in residence at the degree-granting institution."

At the close of the first world war, the Department was confronted with the fact that in holding its employees, recruited during the war period, it could not compete successfully with business and educational institutions. This failure to retain personnel was a moving factor in the establishment of the Graduate School in the Department of Agriculture. The founding of the School was also in harmony with the report of the Joint Congressional Commission on the Reclassification of Salaries, which recommended the extension of post-entry educational facilities for Federal employees. The objective of promoting the advanced education of Departmental employees was, and continues to be, a primary reason for the existence of the School; facilities are now open, however, to all qualified students regardless of where employed. Further, it was realized in 1921 that in the course of a half-century some

of the ablest research men in the country had been assembled in the Department. The Department had grown tremendously in size. Consequently, many of the younger personnel knew these distinguished scientists chiefly by reputation. Here were some of the masters of physical and social sciences whose wisdom and knowledge were not being fully utilized in the training of younger colleagues.

Education as an Administrative Device

In a dynamic democratic order, authority is based upon consent rather than coercion. A task is performed not as a result of command so much as from an understanding of the reason why the job should be done. Accordingly, a great deal of administration or management has become educational in nature. This is essential to a society where planning must depend upon persuasion rather than upon power as its principal sanction. The expert must know not only what needs to be done, but how to get it done. Therefore, another primary purpose, unique in character, of graduate study in the Department of Agriculture has been the bringing together of young and energetic scientists and technicians so that they may profit from the large store of learning accumulated by the older men.

This master-apprentice relation is an old and tried device in the education of youth. A more subtle but valuable result of these direct relationships is a difficult but desirable form of coordination—integration by ideas. No compensation nor promotion plan can do so much to produce the precious quality of morale as the common quest or pursuit of ultimately similar goals. Nothing so builds the urge to accomplishment or the desire for excellence as the knowledge that other persons, many of them with years of experience, are seeking similar truths on the frontier of the known. As fellow scientists, the young and the mature can find a common ground of achievement that no effort can produce in the governmental hierarchy with its artificial atmosphere of superior and subordinate. It is not too much to say that this zeal for new truth was a dominating influence in the first decade of the Graduate School's history. The School matched the wisdom of maturity with the enthusiasm of youth to perform a common task—the advancement of human knowledge.

From Science to Management

Perhaps sooner than anticipated, the course of economic events forced government to draw upon this growing store of human knowledge to steer the United States during the terrible days of depression and war. Eventually more than a few of these scientists found themselves ad-

ministering programs whose genesis could be traced directly to the laboratories and studies of the previous decades. Some proposals had already been tested in the cross-fire of discussion in classrooms and lecture halls.

In the 1930's, the Graduate School was on the threshold of a new era in which it aided not only in the discovery and inculcation of new truths, but in promoting one of the newer sciences—sometimes referred to as the science of management.

The need for administering programs which were themselves the product of the previous decade led to this development. Some men whose life experience had been in laboratories and libraries found themselves developing or administering programs of action. Too frequently these men had had no systematic or formal training in the art, or science, of public administration. Education and research in their particular disciplines were insufficient guides for the administration of complex programs or for dealing with the large numbers of people affected by them. A new set of ideas or skills was necessary in relations with numerous employees and in organization for action, or in responding to a legislature whose own work was often confused by manifold groups, each with its own private purpose to serve. In the 1930's, accordingly, the study of public administration became a significant part of the curriculum of the Graduate School.

Growth by Graduate Study

The war has in part diverted attention from research and administration as fields of study to an intensive and practical application in the acquisition of linguistic and engineering skills. It is altogether possible that new horizons will be opened up in the last years of war and the early years of reconstruction. The probability of the use of scientific and managerial techniques on a world-wide scale seems greater than ever. The experience of two decades points up two significant facts. First of all, the scientist who expects to make a career in the government service needs to add to his equipment a knowledge of the art of public management. He cannot work effectively for government without knowing the nature of his employer. He cannot live in a vacuum aloof from the social and economic forces which he studies, or whose operations affect his personal and professional existence.

Within the last decade the conception of a professional career in the government service has grown in attractiveness. It seems certain that people trained in the technique of public administration alone are not competent to manage a special field of human activity without considerable knowledge of the subject matter itself; likewise subject-

matter specialists are not competent to administer without considerable knowledge of management principles and methods. The Graduate School can and does serve both scientists and administrators by broadening and supplementing their information and skill. For example, a person who is trained as an agronomist may supplement his education by projecting his studies beyond his immediate discipline and preparing himself for related administrative tasks which, as government is now organized, carry greater compensation and prestige. The employee trained primarily in management may broaden his knowledge and widen his usefulness by familiarizing himself with the scientific foundations of the field in which his managerial training is to be applied. In serving all kinds of professional employees in this way, the Graduate School performs a no less valuable service to the Federal Government by improving the professional efficiency of its personnel and increasing their usefulness to the people of the United States, whom they serve.

Many young people were recruited during the depression decade who had started or in some cases substantially completed their graduate work in a professional field. The exigencies of necessity, the growth of family responsibilities, and the pressure of increasing official duties not infrequently caused these people to postpone their earlier intentions of continuing their work toward a highly valued goal, the Doctor of Philosophy degree. The reluctance to sever their official connections and the financial hazards of a leave of absence sometimes caused these persons to delay the realization of their earlier ambitions. To people of this kind, and to young employees who have recently completed the bachelor's degree but wish to begin their graduate study at once, after official hours, the Graduate School offers a rich curriculum and a well-trained teaching staff to enable them to build part of the necessary bridges to the achievement of their original purposes.

Role of the Graduate School

The Graduate School exists to stimulate and encourage the post-entry education of all qualified Federal employees, for whom it constitutes a center of learning after official working hours. In almost a quarter-century of experience in meeting the changing educational needs of Federal employees, the School has become a unique educational institution, combining a graduate school and an extensive affiliated undergraduate program developed to supply necessary foundation courses and in-service training opportunities. Graduate study continues to be the primary interest of the School, although the affiliated undergraduate program has now become larger in size.

The Graduate School is a self-supporting, non-profit institution. It receives no Federal funds. Its government is vested in the General Administration Board, appointed by the Secretary. It is administered by a Director, appointed by the Board, and a small administrative staff, with the advisory assistance of a group of committees named by the Board to represent each of the major divisions of the School.

The School does not grant degrees. Its principal function is to supplement the work of existing institutions of higher learning, not to supersede them. Departmental regulations governing the School state that its purpose is to *"provide graduate education acceptable in graduate institutions for the convenience of employees who desire advanced degrees but find it difficult, both for personal and official reasons, to complete all study in residence at the degree-granting institution."* It is intended that graduate study begun in this manner will be completed at a degree-granting institution.

Teaching and Research Resources

The Graduate School supplies some unusual opportunities for high-grade work. It is able to draw to its staff the best trained scholars in the Federal service, which is now a source of talent unexcelled in the nation. Many of these have had, in addition to governmental service, years of college and university teaching experience in the foremost institutions in the United States. As a result, the caliber of the teaching personnel of the School has been compared favorably with that of some of the best graduate institutions in the country. These persons also have had experience in making useful applications of their knowledge, so that they can bring to bear on their respective subjects both theoretical and applied considerations. For example, teachers of advanced physics have been selected from the National Bureau of Standards;

agricultural economics from the Bureau of Agricultural Economics; biological sciences from the Bureaus of Plant Industry and Animal Industry, Fish and Wildlife Service, and Forest Service; statistics from the Bureaus of the Census, the Budget, and Labor Statistics; and public administration from top staff and line offices in numerous departments and agencies.

The quality of the Graduate School staff is equalled by the library and laboratory facilities offered by Washington. In addition to a large library in the Department of Agriculture itself, containing approximately half a million volumes on both agricultural and non-agricultural subjects, students have ready access to the rich storehouse of the Library of Congress, the Smithsonian Institution, and the National Archives. Supplementing the Department Library as necessary, but merged with it, is a growing collection of books supplied directly by the Graduate School.

Planning a Graduate Program

Careful planning of his graduate program is important for any prospective graduate student, but particularly so for the Federal employee who wishes to make a substantial beginning through the Graduate School of the Department of Agriculture, where degrees are not granted and credits must eventually be transferred to a degree-conferring institution. For that reason several general suggestions and considerations are emphasized in this Bulletin. They should be supplemented by conferences, correspondence, and catalogue consultation, as suggested below.

Importance of Advanced Planning

The importance of a thoroughgoing, advance investigation of all the problems connected with acquiring a graduate degree cannot be overemphasized. A prospective graduate student needs to find out the residence, credit, language, and tuition requirements of all institutions in which he is interested. Furthermore, he should find out the standing of the particular department of the institution in which he expects eventually to take his degree. No reputable graduate institution will grant a degree for a mere accumulation of course credit, however great.

The most vital single factor in studying for an advanced degree is the setting up of a program which includes a group of logically related courses in a special field of scientific or professional study. The wise student will make thoroughgoing preparation for such specialized study by completing the necessary fundamental introductory work which he may not have covered as an undergraduate. Unless his graduate courses are reasonably related to form an organic field of study, he may be sorely disappointed in the amount of credit which will be granted him when he transfers to another graduate school.

Since the Graduate School of the Department of Agriculture does not grant degrees, the Federal employee who wishes to take an advanced degree should consult in advance the dean of the graduate school of the institution where he expects to become a candidate for his degree. This will enable him to plan his work ahead and to secure approval for whatever portion of it the institution of his choice will accept from the Graduate School of the Department of Agriculture. The student who is deficient in basic undergraduate courses needed as a foundation for his graduate program will find many of them available

in the large undergraduate program attached to the Graduate School of the Department of Agriculture. Others may be obtained in local universities.

It is imperative that every graduate student familiarize himself with the detailed rules of the institution where he expects to take his degree. He should consult freely both with the dean of the graduate school and with the head of the department in which he intends to do his major work.

In laying out tentative programs, selecting individual courses, choosing institutions, or planning with other graduate schools, prospective students should always feel free to consult the Director, Assistant Director, or Educational Adviser of the Graduate School of the Department of Agriculture.

Requirements for Graduate Degrees

It is well to remember that graduate degrees, especially the Doctor of Philosophy, are not generally granted on either a time or credit basis. Although graduate schools usually set a minimum of three years' residence or classroom work as a standard, meeting these time prerequisites does not guarantee a degree. All good graduate schools place great emphasis on originality, creative research, independent thought, and disciplined judgment, as qualities desirable in candidates for the Ph.D. degree. The greater number of graduate institutions require a reading knowledge of one foreign language before admission to the candidacy for the Master's degree, and a similar knowledge of two foreign languages, generally French and German, before admission to the candidacy for the doctorate. While instruction in the languages may have been gained anywhere, examinations to determine the candidate's language facility are usually given only by the institution where the student becomes a candidate for a degree. Finally, it is well to keep in mind the fact that it is an almost universal rule of graduate schools to require a grade of B or above to receive credit for graduate work.

Normally, the candidate for a Master of Arts or a Master of Science degree will not be permitted to take more than six hours' credit at any institution other than the degree-granting university. After receiving a Master's degree, those who become candidates for the Doctor of Philosophy degree may do as much as one year of their advanced work at institutions other than the one granting the degree. If the candidate does not wish a Master's degree, it is possible for him to do two of the three years' work necessary for the doctorate outside the degree-granting university. Moreover, it is possible for graduate students to do all their preliminary language requirements and introductory course requirements subject to optional examination from the degree-granting institution.

Importance of Graduate Study in Post-War Period

The United States will face a shortage of competent scholars, trained scientists, and research specialists at the end of the war. Graduate schools have functioned on a very limited scale during the war. Accordingly, several years will be required to fill up the gaps. The problems of society will grow more complex, and scientific investigation will be even more significant. Persons with considerable graduate training will find it imperative to do more graduate work. Society will demand that persons with analytical and scientific aptitudes make their maximum contribution. The opportunities will be such that no Federal employee will dare fail to make the greatest use of his abilities by improving them by additional education.

Detailed Procedures

This Bulletin does not give detailed procedures concerning fees, registration, transcripts, course descriptions, class schedules, etc. For such information students should request a regular Fall or Spring Bulletin of the Graduate School. A few graduate courses are also offered in the summer.

Graduate Courses

Descriptions, fees, instructors, and prerequisites of courses available each semester will be found in the regular Graduate School Bulletin for that semester.

Meaning of symbols:

Courses numbered 500-699 are also open to the most advanced undergraduates.

DEPARTMENT OF BIOLOGICAL SCIENCES

- 554. ADVANCED PLANT ECOLOGY (2)
- 555. PLANT PHYSIOLOGY (2)
- 556. PLANT BIOPHYSICS (2)
- 557. HISTORY OF BIOLOGY (2)
- 559. MEDICAL AND VETERINARY ENTOMOLOGY (2)
- 575. DEVELOPMENT OF MODERN GENETICS (2)
- 784. GENETICS SEMINAR (2)

ECONOMIC GEOGRAPHY
(See Social Sciences 613)

ECONOMIC GEOGRAPHY OF EUROPE
(See Social Sciences 614)

COMPARATIVE WORLD AGRICULTURE
(See Social Sciences 581)

DESIGN AND ANALYSIS OF COMPLEX EXPERIMENTS
(See Mathematics and Statistics 723)

DEPARTMENT OF ENGINEERING AND
MECHANICAL ARTS

- 581. MANUFACTURING INDUSTRIES AND THEIR USE OF ENERGY (2)
- 677. PUBLIC POWER (2)
- 678. WATER POWER ENGINEERING (3)
- 679. ELECTRIC AND GAS UTILITY RATES (2)
- 680. PUBLIC UTILITY EVIDENCE (3)
- 857. ELECTRIC UTILITY ENGINEERING (2)

DEPARTMENT OF LANGUAGES AND LITERATURE

- 565. WRITING OF DOCUMENTED PAPERS (2)
- 566. ADVANCED DICTION FOR EXECUTIVES (2)

DEPARTMENT OF MATHEMATICS AND STATISTICS

MATHEMATICS

- 500. ADVANCED CALCULUS (2)
- 501. INTERMEDIATE ALGEBRA (2)
- 502. DIFFERENTIAL EQUATIONS (2 each semester)
- 504. METHODS OF APPLIED MATHEMATICS (2)
- 700. VECTOR ANALYSIS (2)
- 701. VECTORIAL GEOMETRY (2)
- 702. NOMOGRAMS (1)
- 703. INTERPOLATION AND FINITE DIFFERENCES (3)
- 704. INTERPOLATION, APPROXIMATION, AND MECHANICAL QUAD-
RATURE (1)
- 705. THERMODYNAMICS (2 each semester)
- 706. ANALYTICAL MECHANICS (2 each semester)
- 707. STATISTICAL MECHANICS AND KINETIC THEORY OF GASES
(2 each semester)
- 708. LINEAR ALGEBRA (3)
- 709. THEORY OF INFINITE PROCESSES (3)
- 711. MATHEMATICS FOR ECONOMISTS (2)
- 712. THEORY OF FUNCTIONS (3 each semester)

STATISTICS

- 511. GRAPHIC CORRELATION (2 each semester)
- 512. SELECTED STATISTICAL PROBLEMS (2 each semester)
- 515. CORRELATION ANALYSIS (2)
- 516. INTERMEDIATE STATISTICS (2 each semester)
- 519. ADVANCED STUDY OF TABULATING EQUIPMENT (1)
- 520. STATISTICS OF THE FEDERAL GOVERNMENT (2)
- 721. OPERATION OF STATISTICAL STUDIES (3)
- 722. PROCESSING OF SAMPLE AND COMPLETE SURVEYS (2 each
semester)
- 723. DESIGN AND ANALYSIS OF COMPLEX EXPERIMENTS (2 or 3)
- 724. METHODS OF APPLIED STATISTICS (3)
- 725. INTRODUCTION TO MATHEMATICAL STATISTICS (3)
- 726. INTERPRETATION OF STATISTICAL CALCULATIONS (2)
- 727. PLANNING OF STATISTICAL SURVEYS (2)

- 728. STATISTICAL CLINIC (2)
- 729. POPULATION STATISTICS (2 each semester)
- 730. PSYCHOMETRIC METHODS AND THEORY (2 each semester)
- 731. LEAST SQUARES AND CURVE FITTING (3)
- 732. SAMPLING IN SOCIAL AND ECONOMIC SURVEYS (3)
- 733. THEORY OF SAMPLING (2 each semester)
- 734. STATISTICAL METHODS FOR RESEARCH WORKERS (2 each semester)
- 735. THEORY OF SAMPLE SURVEYS (2 each semester)
- 736. TECHNIQUES OF INTERVIEWING AND QUESTIONNAIRE CONSTRUCTION (4)
- 737. STATISTICS OF CROP ESTIMATING (2)
- 738. INTRODUCTION TO SAMPLING AND STATISTICAL INFERENCE (3)
- 739. MULTIVARIATE ANALYSIS (3 each semester)
- 740. ANALYSIS OF VARIANCE (2)
- 741. THEORY AND APPLICATION OF THE CHARACTERISTIC FUNCTION (2 each semester)
- 743. RESEARCH METHODS IN POPULATION AND LABOR-FORCE INQUIRIES (2)
- 744. MODERN THEORIES OF PROBABILITY (2)
- 745. SEMINARS IN SAMPLING AND STATISTICAL INFERENCE (0)
- 747. MODERN ANALYSIS OF TIME SERIES
- 749. CONTROL OF QUALITY BY STATISTICAL METHODS (1)
- 750. THEORIES OF ACCEPTANCE SAMPLING (3)

DEPARTMENT OF PHYSICAL SCIENCES

CHEMISTRY

522. PHYSIOLOGICAL CHEMISTRY (2 each semester)
762. ELECTROCHEMISTRY (2 each semester)

METALLURGY

525. PRODUCTION METALLURGY (2)
526. ADVANCED PHYSICAL METALLURGY (2)
540. ENGINEERING ALLOYS (2)

SOIL SCIENCE

531. SOILS: THEIR MORPHOLOGY, GENESIS, AND CLASSIFICATION (3)
767. SEMINAR: SOILS AND PLANNING (2)

GEOGRAPHY AND GEOLOGY

532. GEOCHEMISTRY (2)

ECONOMIC GEOGRAPHY

(See Social Sciences 613)

METEOROLOGY

529. WEATHER ANALYSIS AND FORECASTING (3 each semester)
530. INTRODUCTION TO HYDRODYNAMICS (2)
533. HYDROLOGY (2)
534. INTRODUCTION TO DYNAMIC METEOROLOGY (2)
536. PHYSICAL AND SYNOPTIC METEOROLOGY (3)
765. DYNAMIC METEOROLOGY (2 each semester)

ANALYTICAL MECHANICS

(See Mathematics and Statistics 706)

STATISTICAL MECHANICS AND KINETIC THEORY OF GASES

(See Mathematics and Statistics 707)

THERMODYNAMICS

(See Mathematics and Statistics 705)

DEPARTMENT OF PUBLIC ADMINISTRATION

GENERAL ADMINISTRATION

- 617. ADMINISTRATIVE LAW AND PROCEDURE (2 each semester)
- 623. SCIENTIFIC MANAGEMENT (2)
- 624. ORGANIZATIONAL AND PROCEDURAL ANALYSIS (2)
- 625. PSYCHOLOGY OF MANAGEMENT (2)
- 626. FEDERAL ADMINISTRATIVE MANAGEMENT (2)

PERSONNEL ADMINISTRATION

- 629. TESTS AND MEASUREMENTS IN PERSONNEL ADMINISTRATION (2)
- 630. SELECTION AND PLACEMENT (3)
- 631. EMPLOYEE RELATIONS AND COUNSELING (2)
- 639. EMPLOYEE TRAINING (2)
- 659. FEDERAL POSITION CLASSIFICATION (2)
- 661. PERSONNEL ADMINISTRATION (2)
- 663. LEGAL ASPECTS OF INVESTIGATIONS—CRIMINAL EVIDENCE AND PROCEDURE (2)
- 842. PERSONNEL ADMINISTRATION (2)
- 843. ADVANCED POSITION CLASSIFICATION (2)

TECHNIQUES OF INTERVIEWING AND QUESTIONNAIRE CONSTRUCTION
(See Social Sciences 736)

BUDGETARY ADMINISTRATION

- 635. BUDGETARY AND FINANCIAL ADMINISTRATION: BUDGET FORMULATION (2)
- 636. BUDGETARY AND FINANCIAL ADMINISTRATION: BUDGET EXECUTION (2)

PURCHASING

- 637. GOVERNMENTAL PURCHASING (2)
- 638. SURPLUS PROPERTY AND RECONVERSION (3)

ACCOUNTING

- 642. COST ACCOUNTING (3)
- 643. AUDITING (3)
- 645. FEDERAL TAX ACCOUNTING (3)
- 646. ADVANCED ACCOUNTING PROBLEMS (3)
- 647. ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS (2)

DEPARTMENT OF SOCIAL SCIENCES

ECONOMICS

- 548. INTERNATIONAL ECONOMIC CONTROLS (2)
- 579. RESEARCH METHODOLOGY IN ECONOMICS (2)
- 597. HISTORY OF ECONOMIC THOUGHT (3 each semester)
- 672. INCOME, LIVING STANDARDS AND DEMOCRACY (2)
- 692. ECONOMETRICS: MATHEMATICAL AND STATISTICAL ANALYSIS OF ECONOMIC PROBLEMS (2)

MATHEMATICS FOR ECONOMISTS

(See Mathematics and Statistics 711)

- 807. INTERNATIONAL FINANCIAL AND TRADE POLICIES (2)
- 809. PRICE ANALYSIS (3)
- 810. ECONOMICS OF IMPERFECT COMPETITION (3 each semester)
- 813. SEMINAR IN INTERNATIONAL FINANCIAL AND TRADE POLICIES (2)
- 829. CONTEMPORARY PRICE THEORY (2)
- 832. PROBLEMS OF RECONSTRUCTION AND FULL EMPLOYMENT (2)

AGRICULTURAL ECONOMICS

- 580. SOCIAL AND ECONOMIC HISTORY OF AMERICAN AGRICULTURE (3)
- 581. COMPARATIVE WORLD AGRICULTURE (3)
- 585. FARM MANAGEMENT AND PRODUCTION POLICIES (3)
- 586. LAND ECONOMICS (3)
- 587. SEMINAR IN LAND ECONOMICS RESEARCH (2)
- 664. ECONOMICS OF RURAL WELFARE (2)
- 688. CURRENT LAND POLICIES (2)

AGRICULTURAL MARKETING

- 589. COTTON MARKETING (3)
- 610. CONSUMER COOPERATION (2)
- 667. PROBLEMS AND POLICIES IN AGRICULTURAL MARKETING (2 each semester)
- 668. AGRICULTURAL COOPERATION (2)
- 693. MARKETING SERVICES AND REGULATORY ACTIVITIES (2)

LABOR ECONOMICS

- 593. LABOR AND SOCIAL LEGISLATION (3)
- 594. SETTLEMENT OF LABOR DISPUTES (3)
- 595. ORGANIZED LABOR AND THE LAW (3)

ECONOMIC GEOGRAPHY

- 613. ECONOMIC GEOGRAPHY (3)
- 614. ECONOMIC GEOGRAPHY OF EUROPE (2)

POLITICAL SCIENCE AND HISTORY

- 549. PROBLEMS OF RECONSTRUCTION IN GERMANY (2)
- 599. THE BALKANS AND NEAR EAST (2)
- 600. CONTEMPORARY RUSSIA (2)
- 602. CONTEMPORARY CHINA (2)
- 606. PHILIPPINE RECONSTRUCTION (2)
- 607. PROBLEMS OF INTERNATIONAL GOVERNMENT (2)
- 608. WORLD POLITICS (2)
- 611. LA AMERICA LATINA Y LOS ESTADOS UNIDOS (2 each semester)
- 691. PRESSURE GROUPS IN GOVERNMENT (2)
- 813. CONTEMPORARY POLITICAL THOUGHT (2)

PSYCHOLOGY

- 590. SOCIAL PSYCHOLOGY (2)
- 591. RURAL SOCIAL PSYCHOLOGY (2)
- 736. TECHNIQUES OF INTERVIEWING AND QUESTIONNAIRE CONSTRUCTION (2)

SOCIOLOGY

- 655. POPULATION (3)
- 815. CULTURAL REGIONS OF THE UNITED STATES (3)
- 817. COMMUNITY ORGANIZATION (3)

SAMPLING IN SOCIAL AND ECONOMIC SURVEYS
(See Mathematics and Statistics 732)

POPULATION STATISTICS
(See Mathematics and Statistics 729)

TRANSPORTATION

- 601. TRAFFIC MANAGEMENT (3)
- 651. PROBLEMS OF COMMERCIAL AIR TRANSPORTATION (3)
- 652. TRAFFIC MANAGEMENT LAW (3)
- 653. FUNDAMENTALS OF FREIGHT RATES, TARIFFS AND SERVICES (3)

AGRICULTURAL EDUCATION

- 795. EXTENSION THESIS (6)
- 796. EXTENSION EDUCATION (6)

